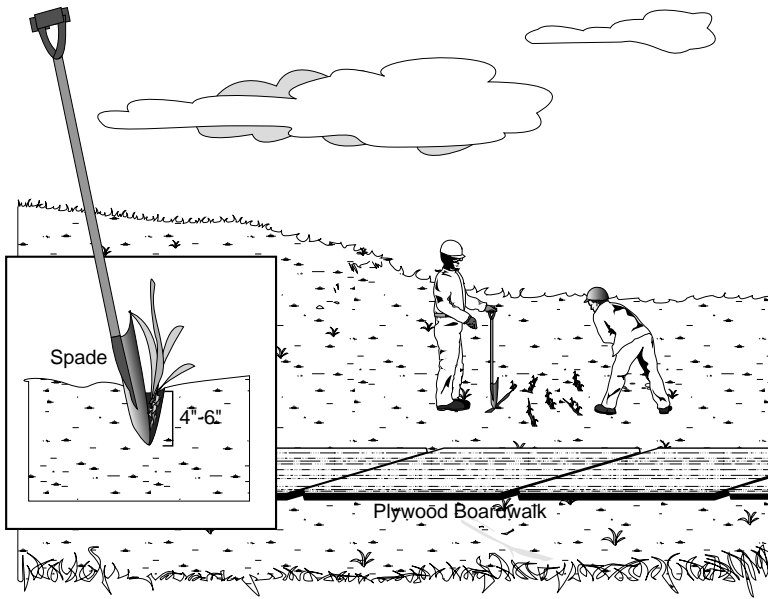


# Transplanting

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Transplanting (also called “sprigging”) is a method of introducing vegetation to a disturbed site when seeds are not readily available. Appropriate plants, usually wet tundra grasses or sedges, are taken from a similar area and replanted at the disturbed site. Generally, most wet tundra and aquatic grasses and sedges can be transplanted successfully. The above-ground portion of the plant may die back after transplanting, but the plant will regenerate from below-ground rhizomes and buds.

- Collect grasses or sedges in wet or aquatic areas by grasping the stem or group of stems as close to the ground as possible and pulling up. The roots must come up with the plant. This is not a concern for *Arctophila fulva*, which will regenerate roots when replanted.
- For moist or dry tundra areas where roots will not remain intact when plants are pulled up for transplanting, a bulb transplanter may be used to collect the above- and below-ground portion of a plant intact with a core of soil. Extrude the soil core/plant directly from the bulb transplanter into a slit in the soil.
- Collect the plants in a large plastic bag to keep them from drying out and transplant them as soon as possible.
- Clumps of grasses or sedges may be divided into many smaller sections (“sprigs”) for replanting. To plant sprigs, one person opens the ground with a long spade-shovel or similar tool, and another person inserts the plant’s roots or stem bottoms into the hole and steps on either side of the plant to secure it in the ground. In wet or aquatic areas, simply press the sprig into the soil or mud by hand.
- Transplant sprigs about 20 inches apart (closer if erosion is a threat). For larger areas, it may be practical to plant sprigs much farther than 20 inches apart.

### Examples of Plants Used for Transplanting on the North Slope

PLANT NAME	TUNDRA TYPE	COMMENTS
<i>Arctophila fulva</i>	Wet (and Aquatic)	Salt tolerant
<i>Caltha palustris</i>	Wet (and Aquatic)	
<i>Carex aquatilis</i>	Wet	Resistant to crude oil
<i>Dupontia fisheri</i>	Moist and Wet	Salt tolerant
<i>Elymus arenarius</i>	Dry and Moist	Salt tolerant, only does well on sandy soil and dunes, offers little competition to natural succession
<i>Eriophorum angustifolium</i>	Wet and Moist	Resistant to crude oil
<i>Hippuris vulgaris</i>	Wet (and Aquatic)	
<i>Menyanthes trifoliata</i>	Wet (and Aquatic)	

### APPLICABILITY

	APPLICABILITY	COMMENTS
SPILLED SUBSTANCE	All	<ul style="list-style-type: none"> <li>Some plants are resistant to oil or salt.</li> </ul>
TUNDRA TYPE	All	<ul style="list-style-type: none"> <li>Type of transplant will depend on tundra type.</li> </ul>
SEASON	Spring, summer, fall	<ul style="list-style-type: none"> <li>Thawed soil conditions are required.</li> </ul>

### CONSIDERATIONS AND LIMITATIONS

- If the site is near the coast or saline substances were spilled, test the soil salt level prior to transplanting (Tactic AM-4). Only certain plants are salt-tolerant.
- Species used must be adapted to transplanting. If the plant has a single tap root (an underground structure which cannot be divided without killing the plant) the species may not be easily transplantable.
- The advantage of transplanting over seeding is that transplants are usually readily available and transplanting can produce plant cover more quickly than seeding; however, transplanting is more labor-intensive. (Note that some species are only available as transplants.)
- Two people working together may be able to harvest sprigs and transplant up to 300 linear feet of shoreline or wet tundra in a 10-hour day (estimate extrapolated from Smith, 1988).
- Arctic scientists have adapted for tundra treatment the transplanting practices used in temporal-zone horticulture and agriculture. This tactic has been used with good short-term results on wet, moist, and, to a lesser extent, dry North Slope tundra on a variety of spill-impacted and physically damaged sites (McKendrick, 1993a; Herlugson et al., 1996; Kidd et al., 1997; Cater and Jorgenson, 1999). Information on the effectiveness of this tactic is based on field observations, not controlled experiments. No test data exist which document whether the use of these techniques results in long-term benefits to tundra restoration compared with other tactics, combinations of tactics, or “no action.”

### EQUIPMENT, MATERIALS, AND PERSONNEL

- Large plastic bags – to carry and store collected plants
- Hand spade or shovel (1 operator, 1 planter) – to open hole in the ground to place sprigs
- Bulb transplanter or “core gun” (1 operator per tool) – to collect plants that cannot be readily pulled up from drier sites (optional – very small sites only)